

## SolarTech Power Solutions

# What is the maximum volt of a lithium battery pack



## Overview

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What is a lithium ion battery voltage?

When working with lithium-ion batteries, you'll come across several voltage-related terms. Let's explain them: **Nominal Voltage:** This is the battery's "advertised" voltage. For a single lithium-ion cell, it's typically 3.6V or 3.7V. **Open Circuit Voltage:** This is the voltage when the battery isn't connected to anything.

What is the maximum charge voltage of a lithium-ion cell?

The maximum charge voltage of a lithium-ion cell is typically 4.2V per cell. For a Samsung ICR18650-26F battery pack, the maximum voltage is 8.4V, which is 4.2V per cell. Exceeding this voltage, such as charging up to 8.5V, can degrade the lifetime of the battery pack.

How do I choose a lithium-ion battery pack?

When selecting a lithium-ion battery pack, understanding its voltage characteristics is crucial for ensuring optimal performance and longevity. Three key voltage terms define a battery's operation: **Nominal Voltage**, **Charged Voltage**, and **Cut-Off Voltage**.

What is the nominal voltage of a battery pack?

This value is commonly used to specify battery packs and serves as a general reference for comparing different battery chemistries. For a 3S Li-ion battery pack (three cells in series), the nominal voltage would be 10.8V ( $3.6V \times 3$ ).  
2. **Charged Voltage: The Maximum Voltage When Fully Charged**  
What Is Charged Voltage?

How many volts does a Li-ion battery pack charge?

The charging voltage of a typical Li-ion battery pack is 4.2V per cell.

Therefore, a two-cell pack would have a charging voltage of 8.4V.

What is a cut-off voltage for a lithium ion battery?

Cut-off voltage is the recommended minimum voltage where a battery should stop discharging to prevent long-term damage. It is usually about 0.2V higher per cell than the absolute minimum voltage. For a 3S Li-ion battery pack, the recommended cut-off voltage would be 8.1V ( $2.7V \times 3$ ). Why Is Cut-Off Voltage Important?

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